

Initial	Date
<i>[Signature]</i>	1/18/11
<i>[Signature]</i>	1/13/11

BA WTR  
BA SD  
Mail Stop 60189

Memorandum

JAN 18 2011

To: Project Leader, Lake Andes National Wildlife Refuge  
From: Chief, Division of Water Resources  
Subject: 2010-2011 Water Use Report/Management Plan

The subject reports for Lake Andes National Wildlife Refuge and Varilek, Sherman, Broken Arrow, and Roth Wildlife Production Areas have been reviewed and approved.

Indicated in last year's report and this year's, it is noted that the Owens Bay Well will be replaced in the future. Please contact Carrie Cordova of my staff a few months prior because a permit will have to be obtained from the State of South Dakota before construction can begin.

Attached is the signed approval page for your files. Thank you for submitting the report in a timely manner.

Attachment

S/ MEGAN ESTEP

bcc: WTR rf

WTR:CCordova:cc:01/13/2011  
I:\WATERUSE\SD\LAKE ANDES\wateruse\_09.doc

# LAKE ANDES NATIONAL WILDLIFE REFUGE COMPLEX

## ANNUAL WATER USE REPORT AND MANAGEMENT PLAN

2010

Prepared by: Mary Hume 1-4-11 Date:

Concurrence: Michael J. Bryan Date: 1/4/11  
Project Leader

Refuges Approval: Paul Com Date: 1-7-11  
Refuge Supervisor

Water Resources Review: Yvonne Date: 1/18/11

WATER USE REPORT/MANAGEMENT PLAN - SHORT FORM - REPORT YEAR: 2010

STATION NAME: Lake Andes NWR

MANAGING STATION: Lake Andes NWR Complex

WATER RIGHTS DATA

WATER RIGHT NO: 220-3 (Owens Bay Well)

PRIORITY DATE: 7/6/1956

SOURCE: Dakota Sandstone artesian aquifer

WATER DIVERTED: YES X NO

IMPOUNDMENTS: YES X NO

MEANS OF DIVERSION: well

AF STORAGE: n/a

RATE OF DIVERSION: (see below)

AF SEASONAL: n/a

WELLS: YES X NO

FREE FLOWING: 2.22 cfs

or PUMPED: n/a

GPM

TYPE OF USE:

Fish & Wildlife: X

Domestic:

Crop Irrigation:

Stock:

Other:

INSPECTION DATA

Please complete all pertinent information for ACTUAL use  
versus the Water Rights data.

DATE OF INSPECTION: 10/19/2010

INSPECTED BY: Edward Rodriguez

CONDITIONS AT INSPECTION: diminishing flow from well

AF STORAGE: n/a

OR

ESTIMATED ELEVATION: n/a

WELLS: FREE FLOWING: .61 cfs (273 gpm)

OR

PUMPED: , n/a GPM

CONDITION OF FACILITIES: Diminished flow and a deteriorating well casing will require replacement of this well in the future.

OVERALL CLIMACTIC CONDITIONS: above normal precipitation.

PROPOSED WATER PROGRAM: previous attempts to reduce flow at wellhead have caused leaking around well casing. Active management is limited.

COMMENTS: This is a free-flowing artesian well.

WATER USE REPORT/MANAGEMENT PLAN - *SHORT FORM* - REPORT YEAR: 2010

STATION NAME: Lake Andes NWR

MANAGING STATION: Lake Andes NWR Complex

WATER RIGHTS DATA

WATER RIGHT NO: 517-3 (Lake Andes)

PRIORITY DATE: 4/22/1940

SOURCE: Andes Creek, Garden Valley Creek, other tributaries

WATER DIVERTED: YES NO X (no longer) IMPOUNDMENTS: YES X NO

MEANS OF DIVERSION: n/a

AF STORAGE: 13,721 af

RATE OF DIVERSION: n/a

AF SEASONAL: 6,813 af

WELLS: YES NO X FREE FLOWING: n/a GPM or PUMPED: n/a GPM

TYPE OF USE: Fish & Wildlife: X Domestic:

Crop Irrigation: Stock:

Other:

INSPECTION DATA

Please complete all pertinent information for ACTUAL use versus the Water Rights data.

DATE OF INSPECTION: 5/11/10

INSPECTED BY: Steve Spawn, Mike Bryant

CONDITIONS AT INSPECTION: lake level was at flood stage to full through the summer and fall

AF STORAGE: <20,634 af OR ESTIMATED ELEVATION: 1439.25 amsl

WELLS: FREE FLOWING: n/a GPM OR PUMPED: n/a GPM

CONDITION OF FACILITIES: Water control structures (WCS) were replaced during 2008. New box culverts were installed in the North and South dikes that are considerably deeper than the previous ones constructed in 1940. Plastic lumber stoplogs were used for the first time in 2009. Ice damaged the new WCS on the South dike in early 2009, requiring removal of the stoplogs at and above the waterline. Repair of the damaged structure is planned for 2011.

OVERALL CLIMATIC CONDITIONS: Above normal precipitation. Lake elevation was at or above full pool for the latter half of the year.

PROPOSED WATER PROGRAM: No active management planned.

COMMENTS: Elevation measured for South unit. Full pool equals 1437.25'. South unit was 2' above full pool. North unit elevation was 1439.2, which is 3' above full pool.

Water Resources examined the potential of the Garden Creek diversion during 2007. The diversion was decommissioned ~50 years ago. Hydrologist Mark Rodney determined that if the diversion were recommissioned it had the potential to contribute ~168 af of water to Lake Andes in a normal year. This equates to .04' of elevation gain over the entire lake. The Charles Mix County Lake Restoration Organization, a local non-profit group, has taken on the challenge of improving water

quality in the Lake Andes watershed. Volunteers collected basic water quality measurements on Lake Andes every month.

WATER USE REPORT/MANAGEMENT PLAN - *SHORT FORM* - REPORT YEAR: 2010

STATION NAME: Lake Andes WMD

MANAGING STATION: Lake Andes NWR Complex

WATER RIGHTS DATA

WATER RIGHT NO: 5250-3 (Varilek WPA)

PRIORITY DATE: 12/27/1988

SOURCE: a natural slough on **Varilek WPA** and private land

WATER DIVERTED: YES \_\_\_\_\_ NO X

IMPOUNDMENTS: YES X NO

MEANS OF DIVERSION: n/a

AF STORAGE: 139 af

RATE OF DIVERSION: n/a

AF SEASONAL: n/a

WELLS: YES

NO X

FREE FLOWING: n/a

GPM or PUMPED: n/a

GPM

TYPE OF USE:

Fish & Wildlife: X

Domestic:

Crop Irrigation: \_\_\_\_\_

Stock:

Other:

INSPECTION DATA

*Please complete all pertinent information for **ACTUAL** use  
versus the Water Rights data.*

DATE OF INSPECTION: ~7/2010

INSPECTED BY: Mike Bryant

CONDITIONS AT INSPECTION: high water level

AF STORAGE: <139 af

OR

ESTIMATED ELEVATION: <1614' amsl

WELLS: FREE FLOWING: n/a GPM

OR

PUMPED: n/a GPM

CONDITION OF FACILITIES: n/a

OVERALL CLIMACTIC CONDITIONS: above normal precipitation

PROPOSED WATER PROGRAM: no active management

COMMENTS:

WATER USE REPORT/MANAGEMENT PLAN - *SHORT FORM* - REPORT YEAR:2010

STATION NAME: Lake Andes WMD

MANAGING STATION: Lake Andes NWR Complex

WATER RIGHTS DATA

WATER RIGHT NO: 5251-3 (Sherman WPA)

PRIORITY DATE: 12/27/1988

SOURCE: a natural slough on Sherman WPA

WATER DIVERTED: YES ☐ NO ☒

IMPOUNDMENTS: YES ☒ NO

MEANS OF DIVERSION: n/a

AF STORAGE: 271 af

RATE OF DIVERSION: n/a

AF SEASONAL: n/a

WELLS: YES ☐ NO ☒

FREE FLOWING: n/a

GPM or PUMPED: n/a

GPM

TYPE OF USE: Fish & Wildlife: ☒ Domestic:

Crop Irrigation: ☐ Stock:

Other:

INSPECTION DATA

Please complete all pertinent information for ACTUAL use  
versus the Water Rights data.

DATE OF INSPECTION: ~7/2010

INSPECTED BY: Mike Bryant

CONDITIONS AT INSPECTION: high water level

AF STORAGE: <271 af

OR

ESTIMATED ELEVATION: <1591.7' amsl

WELLS: FREE FLOWING: n/a GPM OR PUMPED: n/a GPM

CONDITION OF FACILITIES: n/a

OVERALL CLIMACTIC CONDITIONS: above normal precipitation

PROPOSED WATER PROGRAM: no active management

COMMENTS:

WATER USE REPORT/MANAGEMENT PLAN - *SHORT FORM* - REPORT YEAR: 2010

STATION NAME: Lake Andes WMD

MANAGING STATION: Lake Andes NWR Complex

WATER RIGHTS DATA

WATER RIGHT NO: 5077-3 (**Broken Arrow WPA**)

PRIORITY DATE: 10/7/1985

SOURCE: Joubert Drain

WATER DIVERTED: YES ☒ NO ☐

IMPOUNDMENTS: YES ☒ NO ☐

MEANS OF DIVERSION: **Dam #7 (DU Dam)**

AF STORAGE: 131.2 af

RATE OF DIVERSION: unknown

AF SEASONAL: n/a

WELLS: YES ☐ NO ☒ FREE FLOWING: n/a GPM or PUMPED: n/a GPM

TYPE OF USE: Fish & Wildlife: ☒ Domestic: ☐

Crop Irrigation: ☐ Stock: ☐

Other: recreation ☒

INSPECTION DATA

*Please complete all pertinent information for ACTUAL use versus the Water Rights data.*

DATE OF INSPECTION: ~7/2010

INSPECTED BY: Steve Spawn, Mark Heisinger

CONDITIONS AT INSPECTION: high water levels

AF STORAGE: <131.2 af

OR

ESTIMATED ELEVATION: unknown

WELLS: FREE FLOWING: n/a GPM OR PUMPED: n/a GPM

CONDITION OF FACILITIES: some water control structures and the Platte Creek road crossing were damaged by high water.

OVERALL CLIMACTIC CONDITIONS: Above normal precipitation. The pond behind Dam #7 was full for much of the year, storing an amount of water near the limit of our water right (<131.2 af).

PROPOSED WATER PROGRAM: Management will retain as much water as possible.

COMMENTS: Joubert Drain also known as New Holland Drain.



WATER USE REPORT/MANAGEMENT PLAN - *SHORT FORM* - REPORT YEAR: 2010

STATION NAME: Lake Andes WMD

MANAGING STATION: Lake Andes NWR Complex

WATER RIGHTS DATA

WATER RIGHT NO: 6013-3 (Roth WPA)

PRIORITY DATE: 7/30/1997

SOURCE: tributary of Dry Creek

WATER DIVERTED: YES X NO     

IMPOUNDMENTS: YES X NO     

MEANS OF DIVERSION: ditch plug in tributary

AF STORAGE: 323 af

RATE OF DIVERSION: unknown

AF SEASONAL: 212 af

WELLS: YES      NO X FREE FLOWING: n/a GPM or PUMPED: n/a GPM

TYPE OF USE: Fish & Wildlife: X Domestic: X

Crop Irrigation:      Stock:     

Other:     

INSPECTION DATA

*Please complete all pertinent information for ACTUAL use versus the Water Rights data.*

DATE OF INSPECTION: ~7/2010

INSPECTED BY: Mark Heisinger

CONDITIONS AT INSPECTION: high water level

AF STORAGE: <323 af

OR

ESTIMATED ELEVATION: <1398.5' amsl

WELLS: FREE FLOWING: n/a GPM OR PUMPED: n/a GPM

CONDITION OF FACILITIES: good

OVERALL CLIMACTIC CONDITIONS: above normal precipitation

PROPOSED WATER PROGRAM: no active management planned

COMMENTS: In the fall of 2010 we received a complaint from the adjoining landowner to the south (Lance Konrad) that the plug on Roth WPA is causing a significant amount of cropland to be inundated with water especially the last few years. He stated that when the plug was installed the USFWS assured his grandfather that we would remove the plug if there were any issues. Nothing has changed since the plug was constructed in 1997. I inspected their field and will suggest to them to remove some rocks in a crossing on their property which is likely holding water on their property. MJH